



4. Suitability

Introduction

An area is considered suitable for addition to the national park system if it represents a natural or cultural resource type that is not already adequately represented in the national park system, or is not comparably represented and protected for public enjoyment by another land managing entity, including the private sector or other federal agencies; Tribal, state, or local governments.

Adequacy of representation is determined on a case-by-case basis by comparing the potential addition to other comparably managed areas representing the same resource type, while considering differences or similarities in the character, quality, quantity, or combination of resource values. The comparative analysis also addresses rarity of the resources, interpretive and educational potential, and similar resources already protected in the National Park System or by another land managing entity. The comparison results in a determination of whether the proposed new area would expand, enhance, or duplicate resource protection or visitor use opportunities found in other comparably managed areas.¹

Adequacy of Representation of Themes

The National Park Service (NPS) has developed a thematic framework for evaluating potential and existing units within the national park system. The basic thematic framework includes a series of natural and cultural themes. The framework was developed in the 1960s and the cultural history element has been updated to reflect current knowledge or appreciation of events and trends over the past 40 years.

NATURAL HISTORY THEMES

The Gaviota Coast study area includes unique representation of natural history themes. The study area falls within the South Pacific Border

physiographic region. This region includes the Coast Ranges, the Transverse Ranges, and the Peninsular Ranges of California.² The coastal environment and geological landforms of the Gaviota Coast create one of the most diverse ecosystems in the United States.

The discussion below considers the differences or similarities in the character, quality, quantity, and combination of resource values of the Gaviota Coast study area compared with the resources of the NPS units and other public and privately-owned protected areas. Interpretive and educational potential of these resources is considered as well.

Natural History Themes and Sub-themes Represented in the Gaviota Coast Study Area:³

- *Landforms of the Present*
 - Mountain Systems
 - Seashores, Lakeshores, and Islands
 - Works of Volcanism
 - Eolian Landforms (Sand Dunes)
- *Land Ecosystems*
 - Dry Coniferous Forest and Woodland
 - Mixed Evergreen Forest
 - Chaparral
- *Aquatic Ecosystems*
 - Marine Environments
 - Estuaries
 - Lakes and Ponds (Riparian)

Landforms of the Present

Landforms within the study area include mountain systems, seashores, works of volcanism, and eolian landforms (sand dunes).

Mountain Systems: The mountain systems within the study area are part of the Coast Range and the Transverse Range geomorphic provinces. The Coast Range portion is managed by Vandenberg AFB, and the Los Padres National Forest manages portions of the Transverse Range (Santa Ynez

Mountains). Farther south, the Santa Monica Mountains National Recreation Area manages the southern portion of the Transverse Range.

Seashore: The east west trending of the Transverse Range creates the longest south facing shoreline on the Pacific with the exception of Alaska. The shoreline in the study area is also sheltered by the offshore Channel Islands, creating a warmer, milder environment for coastal species and recreation. The continuous stretch of south-facing seashore from Ellwood to Point Conception cannot be found in any other comparably managed area along the west coast. Agricultural land, including ranchland, row crops and orchards, add to the unique character of the coastal landscape.

The scenic vistas, sandy beaches, rugged and rocky shoreline, and warmer climate provide outstanding opportunities for public use and enjoyment. Recreational activities along the study area coast include world-class surfing, hiking, diving, swimming, sunbathing, beach combing, exceptional marine mammal watching, birding, boating, sport fishing, picnicking, camping, bicycling, horseback riding, nature study, photography, and painting. State and county parks and beaches and private preserves provide for visitor enjoyment.

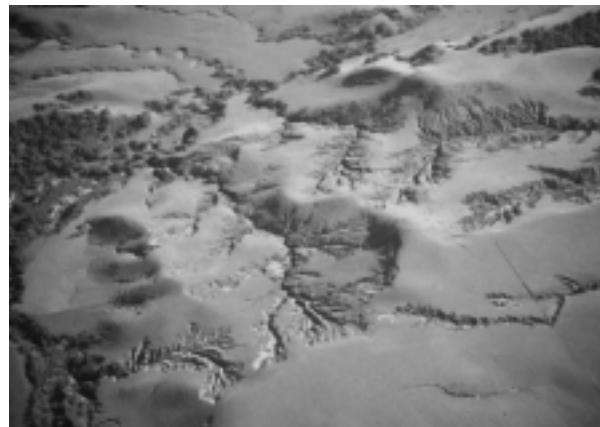
The study area coastal setting is unique in comparison to other park areas in California. The Vandenberg AFB portion of the seashore is similar to Point Reyes National Seashore's landform, which

does not have the same quality as the south-facing seashore from Point Conception to Ellwood. The Channel Islands National Park seashore quality is different from the study area seashore because of the isolated, exposed, and windy conditions experienced on the islands. Santa Monica Mountains and Golden Gate National Recreation Areas are also coastal areas but have an urban setting. The Gaviota Coast study area has natural quiet and dark night skies, qualities that are rare on the California coast. Current protection of this coastline includes small and somewhat disconnected state and county parks and beaches.

Works of Volcanism: Igneous rocks at Point Sal are the best-exposed and best-studied ophiolites in North America. The character and quality of the ophiolites provide exceptional representation of the subtheme, "Works of Volcanism." Because the ophiolitic formations in the Point Sal area are the most complete and well-exposed, compared to other ophiolites found along the west coast from California to Alaska, they provide excellent potential for scientific research on the formation of the earth's crust. Currently, public access to the ophiolites is limited to tours and classes as permitted by managing agencies, which include Santa Barbara County, the Bureau of Land Management, and Vandenberg AFB. Access to and interpretation of, these resources at Point Sal could be improved through partnerships making the resources more available to a larger population. Oregon Caves National Monument also protects ophiolite resources.



study area seashore, NPS photo



Las Cruces area (north of Gaviota State Park), NPS photo

Eolian landforms: Both northern and southern dune systems exist in the study area, representing the subtheme eolian landforms. North of Point Sal is the Guadalupe-Nipomo Dunes Wildlife Refuge which stretches 18 miles to Pismo Beach. These northern-affinity dunes are protected by the US Fish and Wildlife Service. This is one of the last remaining relatively intact ecosystems of its type and size in the western United States.⁴ Because the coastal dunes on Vandenberg AFB and Point Sal are the same affinity as the Guadalupe-Nipomo Dunes Wildlife Refuge, joint efforts to connect and manage the area would expand and enhance the resource, which has been severely reduced from its former range.

Land Ecosystems

Dry coniferous forest and woodland, mixed evergreen forest, and chaparral. The Gaviota Coast study area contains rich biodiversity featuring both northern and southern affinity species that intermingle in the ecological transition zone. This type of transitional area is not yet represented in the National Park System. As the largest contiguous area of undeveloped coastal habitat within the Southwestern Ecoregion, the study area plays a critical role in the survival of many globally imperiled species. The study area includes eight rare and endangered habitat types that represent three sub-themes of land ecosystems: dry coniferous forest and woodland, mixed evergreen forest, and chaparral. These habitat types include: bishop pine forest, tanbark oak forest, valley oak woodlands, coastal sage-chaparral scrub, central maritime chaparral, native grassland, riparian woodlands, coastal dunes and strand. The combination of these resources makes the study area suitable for inclusion in the National Park System.

The study area also provides the only opportunity in California for research and interpretation of the ecological transition zone for Mediterranean vegetation types. Point Reyes National Seashore and Golden Gate National Recreation Area contain only northern affinity species and Santa Monica Mountains National Recreation Area contain only southern affinity species. Channel Islands National

Park has habitat similar to the study area. However, the islands have less species diversity than the mainland coast because of their isolated setting, which has created many species endemic to the islands.

The quality and quantity of riparian habitat in the study area is particularly significant because riparian areas support the highest number of species and have been reduced more than any other habitat in North America. Riparian areas on Vandenberg AFB are some of the most intact and biologically significant. Using bird species as an indicator of species richness, Vandenberg AFB's riparian habitats appear to be the richest in coastal California. Riparian habitat of this quality is not found in any coastal park unit in California.

Aquatic Ecosystems

The aquatic resources of the study area represent three sub-themes: marine environments, estuaries, and lakes and ponds (freshwater wetlands). Rare and endangered aquatic habitat types include rocky intertidal areas, kelp beds, sea grasses, reefs, and wetlands. The area surrounding Point Conception is of great biological significance. It is one of the world's most striking biogeographic boundaries marking the abrupt transition from cold water northern species to warm water southern species. The offshore marine transition zone contributes to the unique mix of species that is not found anywhere else along the Pacific Coast. While Channel Islands National Park and the Marine Sanctuary protect many of the same aquatic systems, the health of this aquatic ecosystem is dependent on the protection of coastal watersheds in the study area. Similar to land ecosystems, the marine transition zone creates a combination of resource values along the coast not represented in other comparably managed areas.

The study area includes a majority of the few **estuarine wetlands** that remain in southern California. Estuaries are protected at Santa Monica Mountains National Recreation Area and Channel Islands National Park. However, estuarine wetlands

in Santa Monica NRA have been degraded due to hydrologic alterations. Point Reyes National Seashore protects estuaries that also contain high species diversity. Species at Point Reyes are of northern affinity while the estuaries of the Gaviota Coast study area contain both northern and southern affinity species.

CULTURAL THEMES

The Gaviota Coast study area contains significant archeological and cultural sites and structures. These sites and structures provide unique representation of NPS cultural resource themes.

Cultural Themes and Topics Represented in the Gaviota Coast Study Area:⁵

- *Peopling Places*
Ethnic Homelands (Chumash)
- *Shaping the Political Landscape*
Military Institutions and Activities (Cold War)
Political Ideas, Cultures and Theories (Cold War)
- *Expanding Science and Technology*
Technological Applications (Military and Space Launch Technology)
- *Changing Role of the United States in the World Community*
International Relations (Cold War)
- *Developing the American Economy*
Extraction and Production (Ranching)
Transportation and Communication (Maritime)

The following discussion considers the differences or similarities in the character, quality, quantity, and combination of the cultural resource values of the study area compared with the resources of the NPS units and other areas owned by other land managing entities. This discussion also addresses interpretive and educational potential.

Peopling Places: Ethnic Homelands

The richness and density of Chumash archeological sites along the Gaviota Coast tells the story of the Chumash habitation within the study area. The

Chumash lived in the Santa Monica Mountains area, the Channel Islands, and along the central coast. By the time the Spanish explorers visited Santa Barbara County, the culture of the Chumash had become one of the most complex in California.⁶ The density of sites within the study area offers exceptional potential for research and interpretation that will address questions about human activity along the coast over the past 10,000 years. Extensive surveying and inventorying of Vandenberg AFB has uncovered some of the most important sites in California. Other portions of the study area that have high suitability for prehistoric occupation have not been extensively surveyed and studied. Many of the plants and animals important to early cultures and Chumash who resided in the study area are still present, allowing the study and appreciation of sites in their ecological context. Much of the southern California coast lacks this quality because sites and context have been altered by development.

Currently, both Santa Monica Mountains NRA and Channel Islands NP contain Chumash archeological sites and interpret their story, but in different



rock art at Tranquillon Peak, Rick Skillin

ecological settings and prehistoric context. The archeological sites within the study area provide the potential to expand and enhance the existing archeological record at Santa Monica Mountains NRA, Channel Islands NP, and Vandenberg AFB. A coordinated interpretive approach would tie the stories of the different Chumash groups together providing new education opportunities.

Shaping the Political Landscape: Military Institutions and Activities and Political Ideas, Cultures and Theories; Expanding Science and Technology: Technological Applications (Military and Space Launch Technology); and Changing Role of the United States in the World Community: International Relations.

Many cultural sites relating to the Cold War era within the Gaviota Coast study area provide representation of the above cultural themes: Vandenberg AFB's role in the military and civilian space programs provides representation of the Cold War era (1946-1989). It contains one of the most comprehensive assemblages of Cold War missile and space launch facilities in the country. Seventy-two facilities surveyed for listing on the National Register of Historic Places are all nationally significant, front-line military systems representing five weapons systems (Thor, Atlas, Titan,



Vandenberg Air Force Base

Minuteman, and Peacekeeper).⁷ Vandenberg AFB is the only site where intercontinental ballistic missiles (ICBMs) were test-launched under operational conditions. Thousands of missile combat and maintenance crews received their training at the installation.

As the only launch site in the United States that offers a direct and safe flight path for polar-orbiting satellites, it became a major launch site for satellites providing critical information to decision-makers during the Cold War. The National Park

Service conducted a "Man in Space" National Historic Landmark Theme Study in 1984 to evaluate all resources which related to the theme of Man in Space and to recommend a number of resources for designation as National Historic Landmarks. The study found Space Launch Complex-10 to be the finest remaining example of a 1950s-era launch complex in the country.⁸ Following the study, this site was designated a National Historic Landmark.

The assemblages of Cold War missile and space launch facilities at Vandenberg AFB offer opportunities for preservation and interpretation of military and space launch technology, which have not yet been covered adequately in the National Park System. Minuteman Missile National Historic Site represents only one type of weapons system, the intercontinental ballistic missile (ICBM). Cape Canaveral Air Station in Florida is the only other installation in the United States that approaches the Cold War significance of Vandenberg AFB in terms of its contribution to the nation's ballistic missile and space programs.⁹ The adjacent Canaveral National Seashore has a visitor center that interprets the space program.

Rancho del Cielo, President Reagan's private ranch and "Western White House" served as the location for historic events related to the Cold War era and visits from world leaders during the President's term in office. His ranch was the site of several notable visits during his administration. The ranch is preserved in its Presidential-era condition by the Young America's Foundation, and managed for educational purposes. Because of the significant events that took place at Rancho del Cielo, this site provides the opportunity for interpretation of President Reagan's role during the Cold War era. Even though this site is not yet 50 years old, it could still be eligible for listing on the National Register of Historic Places because of its relationship to an American President and political events of transcendent importance. The Ronald Reagan Boyhood Home NHS was recently authorized.

Developing the American Economy: Extraction and Production (Ranching). As one of the last remaining rural landscapes on the southern California coast, the study area has retained much of the character and scenery of its ranching history. The landscape of historic ranches such as Sudden, Cojo-Jalama, Santa Anita, and Rancho Refugio has changed little since Mission times and provides opportunities for research and visitor interpretation. Historic ranching operations are currently represented at several units in the park system, including Point Reyes National Seashore, Santa Monica National Recreation Area, and Grant-Kohrs Ranch. The ranching operations that continue at Point Reyes correlate closely to the activities on the Gaviota Coast, due to similarities in topography and geographic location. More studies, including cultural landscape analysis, would need to be conducted in order to determine whether the ranching resources of the study area are suitable in comparison to other areas in the National Park System.

Transportation and Communication (Maritime). The study area has a rich maritime history dating back to Chumash use of the plank canoe for fishing and trade with Chumash islanders. Historic maritime events continued as the area was explored and settled by others. Because of the area's rocky coastline, a large number of shipwrecks occurred along the study area coast. The *SS Yankee Blade* shipwreck, listed on the National Register of Historic Places, was a Gold-Rush era side-wheel steamer that struck a rock off Point Pedernales in 1854. In 1923, the Point Pedernales Naval Destroyer Disaster was one of the worst naval peacetime disasters recorded in U.S. Navy history. Seven of fifteen vessels were lost in this dramatic wreck. In addition to shipwrecks, wharves/landings, lighthouses, and marine based land settlements are other structures related to maritime history. The many types of maritime resources provide opportunities to expand and enhance existing interpretation of maritime resources at parks such as San Francisco Maritime NHP and Point Reyes NS. Further studies are needed to evaluate the quality and rarity of the resources in comparison to those protected at other park units.



barn at Sudden Ranch, NPS photo

Table 5: Suitability Analysis

THEME	SUITABILITY ANALYSIS FOR THE GAVIOTA COAST STUDY AREA
Natural History Themes	
<i>Landforms of the Present</i>	
Seashores	<ul style="list-style-type: none"> ▪ Quality, quantity, character: Ellwood to Point Conception is longest south-facing shoreline on the Pacific Coast (with the exception of Alaska), sheltered by the offshore Channel Islands, creating a warmer, milder environment for coastal recreation. ▪ Rarity: approximately 50% of remaining southern CA rural coastline; continuous stretch of undeveloped coastline. ▪ Interpretive / educational potential: coordinate increased public access and interpretation opportunities. ▪ Similar resources protected: unique in comparison to Point Reyes National Seashore and other park units because of coastal setting and south-facing shoreline.
Works of Volcanism	<ul style="list-style-type: none"> ▪ Quality, quantity, character: ophiolitic remnants found at Point Sal are one of the best-exposed and best-studied ophiolites in North America. ▪ Rarity: other ophiolites occur along the west coast but do not have same quality as at Point Sal. ▪ Interpretive / educational potential: potential for scientific research on formation of Earth's crust; currently limited guided groups have access. ▪ Similar resources protected: Oregon Caves National Monument also protects ophiolites.
<i>Mountain Systems</i> <i>Eolian Landforms (sand dunes)</i>	<i>The quality and character of these two landforms are already represented by the National Park Service and protected by other land managing agencies. Although the portion of the Transverse Range within the study area and the northern and southern dune complexes do not make the area suitable alone, they do contribute to the suitability of other features including biodiversity.</i>
<i>Land Ecosystems</i>	
Dry Coniferous Forest and Woodland Mixed Evergreen Forest Chaparral	<ul style="list-style-type: none"> ▪ Quality, quantity, character: rich biodiversity features both northern and southern affinity species that intermingle in the ecological transition zone. <ul style="list-style-type: none"> – Eight rare and endangered types of land-based habitat within the study area include: bishop pine forest, tanbark oak forest, valley oak woodlands, coastal sage-chaparral scrub, central maritime chaparral, native grassland, riparian woodlands, coastal dunes and strand. – Quality and quantity of riparian habitat on Vandenberg AFB is particularly significant. ▪ Rarity: combination of these habitats is very rare. ▪ Interpretive and educational potential: provides only opportunity in California for education and interpretation of the ecological transition zone of Mediterranean vegetation types. ▪ Similar resources protected: other areas protect certain habitats but none have the quality and combination of the study area.

THEME	SUITABILITY ANALYSIS FOR THE GAVIOTA COAST STUDY AREA
<i>Aquatic Ecosystems</i>	
<p>Marine Environments</p> <p>Estuaries</p> <p>Lakes and Ponds</p>	<ul style="list-style-type: none"> ▪ Quality, quantity, character: rich biodiversity, including cold water northern species to warm water southern species, due to offshore marine transition zone. <ul style="list-style-type: none"> – Rare and endangered aquatic habitat include rocky intertidal areas, kelp beds, sea grasses, reefs, and wetlands. – Includes many of the few estuarine wetlands in S. California. ▪ Rarity: mix of species not found anywhere else along Pacific Coast. ▪ Interpretive and educational potential: South Coast Marine Intertidal Zone that stretches from Point Conception to Ellwood is of great interest to biogeographers because of the offshore marine transition zone; opportunities exist for scientists to conduct research of riparian resources at Vandenberg AFB. ▪ Similar resources protected: Channel Islands National Park protects many of the same aquatic systems; Santa Monica Mountains National Recreation Area also protects estuaries. These estuaries have been degraded by hydrologic alterations.
Cultural Themes	
<i>Peopling Places</i>	
<p>Ethnic Homelands (Chumash)</p>	<ul style="list-style-type: none"> ▪ Quality: richness and density of Chumash archeological sites well preserved with western portion of the study area mostly undisturbed. ▪ Quantity: 1,300 sites inventoried on Vandenberg AFB; surveys at Point Sal and Point Conception have yielded high number of sites listed or eligible for listing on National Register . ▪ Character: many plants and animals important to early cultures and Chumash who resided in the study area are still present, allowing the study and appreciation of sites in their ecological context. ▪ Rarity: extensive surveying and inventorying of Vandenberg AFB has uncovered some of the most important sites in California. ▪ Interpretive and educational potential: archeological sites within study area provide potential to expand and enhance the existing archeological record at Santa Monica Mountains National Recreation Area and Channel Islands National Park. <ul style="list-style-type: none"> – Coordinated interpretive approach with Santa Monica Mountains NRA and Channel Islands NP would tie the stories of the different Chumash groups together. ▪ Similar resources protected: both Santa Monica Mountains NRA and Channel Islands NP protect archeological sites and interpret their story, but in different ecological settings and prehistoric context.
<p>Many cultural sites relating to the Cold War era represent the following themes:</p> <p><i>Shaping the Political Landscape</i></p> <p><i>Expanding Science and Technology:</i></p> <p><i>Changing Role of the United States in the World Community</i></p>	
<p>Military Institutions and Activities and Political Ideas, Cultures and Theories</p> <p>Technological Applications (Military and Space Launch Technology)</p> <p>International Relations</p>	<p>Vandenberg AFB resources related to the Cold War era</p> <ul style="list-style-type: none"> ▪ Quality, quantity, character: Vandenberg AFB played an important role during the Cold War era; became a major launch site for satellites providing critical information to decision-makers during the Cold War. <ul style="list-style-type: none"> – Vandenberg AFB contains one of the most comprehensive assemblages of Cold War missile and space launch facilities in the country.

THEME	SUITABILITY ANALYSIS FOR THE GAVIOTA COAST STUDY AREA
	<p>– Man in Space” National Historic Landmark Theme Study found that Vandenberg AFB contained the finest remaining example of a 1950s-era launch complex in the country and resulted in the designation of Space Launch Complex 10 National Historic Landmark.</p> <ul style="list-style-type: none"> ▪ Rarity: best example of an installation whose programs contributed to Cold War effort. – Only launch site in the United States that offers a direct and safe flight path for polar-orbiting satellites. ▪ Interpretive and educational potential: resources offer opportunities for preservation and interpretation of an important era in American foreign policy and global political influence in the nuclear age; NPS could supplement Vandenberg AFB’s resource protection with historical interpretation and education. ▪ Similar resources protected: Minuteman Missile NHS represents only one type of weapons system, the intercontinental ballistic missile (ICBM) while Vandenberg AFB represent 5 types of weapons systems. – Only one other installation in the United States, Cape Canaveral Air Station in Florida, approaches the Cold War significance of Vandenberg AFB in terms of its contribution to the nation’s ballistic missile and space programs.¹⁰ <p>Rancho del Cielo</p> <ul style="list-style-type: none"> ▪ Quality, quantity, character: Rancho del Cielo, President Reagan’s private ranch and “Western White House” served as the location for historic events and visits from world leaders during the President’s term in office. – Even though this site is not yet 50 years old, it could still be eligible for listing on the National Register of Historic Places because of its transcendent significance. ▪ Rarity: only one of its kind. ▪ Interpretive and educational potential: managed by the Young America’s Foundation for educational purposes. ▪ Similar resources protected: over 30 sites associated with Presidents and politics including the recently authorized Ronald Reagan Boyhood Home NHS.
<p><i>Developing the American Economy (further studies are needed to evaluate the quality and rarity of the resources)</i></p>	
<p>Extraction and Production (ranching)</p>	<ul style="list-style-type: none"> ▪ Quality, quantity, character, and Interpretive and educational potential: study area has retained much of the character and scenery of its ranching history; the landscape of historic ranches such as Sudden, Cojo-Jalama, Santa Anita, and Rancho Refugio has changed little since Mission times and provide opportunities for research and visitor interpretation. ▪ Similar resources protected: historic ranching operations are currently represented at several units in the park system, including Point Reyes National Seashore, Santa Monica Mountains NRA, and Grant-Kohrs Ranch. – More studies, including cultural landscape analysis, are needed in order to determine whether the ranching resources of the study area are suitable in comparison to other areas in the National Park System.

THEME	SUITABILITY ANALYSIS FOR THE GAVIOTA COAST STUDY AREA
Maritime: Shipwrecks, Lighthouses	<ul style="list-style-type: none"> ▪ Quality, quantity, character: shipwrecks, wharves/landings, lighthouses, and marine based land settlements protected. <ul style="list-style-type: none"> – The <i>SS Yankee Blade</i> shipwreck and Point Conception lighthouse are listed on the National Register of Historic Places. – Because of area's rocky coastline, large number of shipwrecks occurred along the study area coast. ▪ Rarity: other shipwrecks, lighthouses elsewhere. ▪ Interpretive and educational potential and similar resources protected: the many types of maritime resources provide opportunities to expand and enhance existing interpretation of maritime resources at parks such as San Francisco Maritime NHP and Point Reyes NS. <ul style="list-style-type: none"> – Further studies are needed to evaluate the quality and rarity of the resources.

Summary Statement: Suitability

Based upon evaluation of the study area resources and their relative quality, character, and rarity, the National Park Service has determined that the Gaviota Coast study area is suitable for inclusion in the National Park System for its representation of natural history and cultural themes.

The natural resource types that are not yet adequately represented in the National Park System include the south-facing seashore and the species diversity created by the terrestrial and marine transition zones between northern and southern California. Cultural resource types that are not yet adequately represented in the National Park System include the rich Chumash archeological resources representing 10,000 years of human occupation and the historical resources related to the Cold War era.

Notes

1. National Park Service. 2001. *National Park Service Management Policies*. United States Department of the Interior.
2. National Park Service, 1990b. *Natural History in the National Park System and on the National Registry of Natural Landmarks*. Natural Resources Report, NPS NR NRTR-90/03.
3. National Park Service, 1990b.
4. United States Fish and Wildlife Service (USFWS). July 2000 (2000a). *Proposed Guadalupe-Nipomo Dunes National Wildlife Refuge*. U.S. Fish and Wildlife Service, Ventura, California.
5. National Park Service 2000. *History in the National Park Service: Themes & Concepts*.

[<http://www.cr.nps.gov/history/hisnps/NPStinking/themes/concepts.htm>]

6. California State Office of Historic Preservation. October 1985. *California Comprehensive Heritage Resource Management Plan: Santa Barbara County Element*. Written by Dr. L. Mark Raab and the Santa Barbara County Heritage Planning Group for California State Office of Historic Preservation. Sacramento, CA.
7. U.S. Army Corps of Engineers. 1998. *Vandenberg Air Force Base, Cold War Pioneer*. Legacy Project Number 734.
8. National Park Service. 1984. Written by Dr. Harry A. Butowsky for the National Park Service. *Man in Space: A National Historic Landmark Theme Study*.
9. U.S. Army Corps of Engineers, 1998.
10. U.S. Army Corps of Engineers, 1998.



all photos: NPS